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SHOULD VITAMIN D BE GIVEN ONLY TO INFANTS?

VITAMIN D has been so successful in preventing rickets during infancy that there has been little emphasis on continuing its use after the second year.

But now a careful histologic study has been made which reveals a startlingly high incidence of rickets in children 2 to 14 years old. Follis, Jackson, Eliot, and Park* report that postmortem examination of 230 children of this age group showed the total prevalence of rickets to be 46.5%.

Rachitic changes were present as late as the fourteenth year, and the incidence was higher among children dying from acute disease than in those dying of chronic disease.

The authors conclude, "We doubt if slight degrees of rickets, such as we found in many of our children, interfere with health and development, but our studies as a whole afford reason to prolong administration of vitamin D to the age limit of our study, the fourteenth year, and especially indicate the necessity to suspect and to take the necessary measures to guard against rickets in sick children."

*R. H. Follis, D. Jackson, M. M. Eliot, and E. A. Park: Prevalence of rickets in children between two and fourteen years of age, Am. J. Dis. Child. 66:1-11, July 1943.

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Vol. XV DECEMBER, 1945 No. 10

SOME OUTSTANDING FEATURES IN THE EDUCATION OF THE HANDICAPPED AT SPALDING SCHOOL, CHICAGO, ILLINOIS

CELESTINE IGOE, *Director*
*Spalding School, Chicago, Illinois**

Spalding School, located close to the medical center of Chicago's "Great West Side," is the only school of its kind in the world. Here, children from the nursery through high school are educated and cared for both physically and mentally, in a school built and equipped especially for them. This fact, together with the fact that, to my knowledge, there is no other especially constructed and equipped high school for the handicapped in the United States, makes Spalding a unique institution. Its prestige is apparent in that it is visited daily by interested doctors, nurses, and educators from points far and wide.

Elementary School. Spalding Elementary School has an enrollment of approximately 800 children. Unlike other elementary schools, because of the necessity of overemphasizing physical activities and exercises, Spalding boasts a very large woodshop, a sewing room, cooking room, special shop for weaving, clay modelling, and a shoe repair shop. Classroom instruction, as well as music and art, is conducted according to the same plans and program as in other public schools.

Children report to the treatment center, pools, rest-rooms, etc., as a regular part of their program. Regular hours for treatment are assigned when the hours for academic work are assigned. Treatment must always take precedence over other work, even though it may mean spending more time in a grade of school.

Spalding High School. The High School is housed in a new wing of the building. In September, 1942, this addition to the well-known Spalding Elementary School was completed. Students, formerly in two separate buildings functioning as branches of two

*On September 18, 1945, three members of the Governing Council of the American School of Health—William Ayling, M.D., Director of School Health, Syracuse, N. Y.; John E. Burke, M.D., Assistant Superintendent of Schools, Schenectady, N. Y., and the Editor, had the profitable pleasure of visiting this school.

regular high schools, moved into their own special quarters. In 1943, Spalding High School was visited by the Committee of North Central Association of Colleges and Secondary Schools and placed on the accredited list of high schools.

Enrolled in the high school may be found close to 400 students with all possible opportunities at their command. Besides academic courses, there are many vocational opportunities offered for those interested. The latter includes an industrial arts shop; a print shop; a wood and metal shop; a shoe repair shop; an arts and crafts laboratory; and a home arts laboratory.

The high school also boasts a fully equipped library, gymnasium, swimming pool, and a furnished apartment—living room, dinette, and bath—for instruction in homemaking and housekeeping; also a social room furnished by a group of interested businessmen in memory of a former student.

Counseling and Placement. When a Spalding High School student is desirous of obtaining a full-time position, upon graduation or a part-time job during the academic year, the adjustment teacher contacts the Placement Counselor for the Physically Handicapped at the Illinois Association for Crippled Children.

Usually toward the end of a semester, the counselor interviews each graduating senior at Spalding, encouraging the student to ask questions regarding the occupational opportunities available to the handicapped, such as specific skills or abilities needed in sundry industries, beginning wages to be expected in these occupations, and the physical demands to be met. Following this interview the counselor contacts the clinic or physician attended by the student to determine the nature and extent of the handicap and the amount of work the individual is capable of performing without jeopardizing his health.

As soon as the medical record has been received, an appointment for a second interview is immediately sent to the graduate or student seeking employment. It is at this second interview that the counselor attempts to integrate the student's marketable qualities with employer demands.

After consulting the *open order* file and upon finding a position, the applicant is sent to a particular employer for an interview, takes with him a *referral card,* which is signed and returned to the placement counselor. On this card the employer states in what capacity he hired the applicant and the salary to be received. If the employer does not hire the applicant, the reason for not accepting the individual is noted.

From an academic viewpoint the handicapped boy or girl receives the same preparation for adult living as does the physically fit person. It is expected then that the handicapped, being similarly equipped to enter into competitive industry, should receive the same advancement and privileges afforded his fellow workers.

Spalding Nursery.

I. *Class:* Sixteen children from two and one-half to four years of age.

II. *Personnel:* One full-time physiotherapist whose salary is paid by the parents' organization. One half-time physiotherapist who also works with kindergarten children; her salary is paid by the Board of Education. One nursery-kindergarten teacher who cares for both nursery and kindergarten children; paid by the Board of Education. One Crippled Children's Attendant; paid by the Board of Education.

III. *Rest Room:* A room adjoining the nursery where the children from the two kindergartens and nursery rest. Here are 35 movable cots which are rolled away to provide equipment for treatment and exercise of the children, after 10:30 A. M.

IV. *Dining Room:* A special room equipped for feeding spastic children. The physiotherapists from the nursery, kindergarten, and primary rooms assist in the feeding. It is impossible for these children to eat in the regular dining room.

V. *Transportation:* Because Spalding maintains the only nursery for spastic children, babies from all over the city are eligible. These children are "picked up" by the buses, which cover the entire city for the high school service.

In September, 1942, the nursery at Spalding School was organized by a group of parents of babies afflicted with cerebral palsy. This is the only public nursery of its kind in Chicago. There is no provision in the Chicago Public School System for the education or care of babies under five years of age, and under ordinary circumstances there is really no reason for taking children under that age into a school situation. However, the cerebral palsy child is a most unusual problem. Many of the nursery babies are entirely helpless, and their parents are hopeless when they become aware of the fact that their child cannot talk, walk, sit, stand, or eat without assistance.

At Spalding, the ideal age for nursery registration is set at two and one-half years minimum. A waiting list of about 20 children, however, makes it difficult to adhere strictly to this ruling. Because of the fact that it is necessary to do as much as possible for the child before he enters kindergarten, those nearest to four years of age are given preference when vacancies arise.

The spastic nursery necessarily must have special equipment: piano, exercise and play apparatus, toys, and dishes. These, as well as bibs, bedding, and pads, are all furnished by the parents' organization.

The nursery organization's social service workers make personal contact with each home where a spastic baby lives, as soon as the name is submitted. When parents are able to contribute to the organization treasury, they pay $150.00 per year. If parents are unable to pay this amount, a lesser amount is acceptable, and if they are not able to pay anything, arrangements are made to receive the baby free of charge. Besides the tuition fees, which are used to pay the salary of the physiotherapist, many donations are constantly received by the organization.

The teacher in the nursery, as well as the women attendants on duty there, is part of the regular Spalding School personnel. The Board of Education also assumes the responsibility of transportation for and feeding of the nursery children. It also furnishes all equipment necessary for carrying out treatments recommended by the doctors: treatment pool, swimming pool, ultraviolet ray solarium, and infrared lamps.

In addition to teacher, physiotherapist, and attendant, the parents assume the responsibility of having a doctor on the nursery staff. This doctor acts as a physiotherapist consultant. He reports once a week to the nursery and examines babies as he consults with the physiotherapist on duty.

At regular intervals meetings of nursery parents are held in a room apart from the nursery. Here the physiotherapist, assistant principal, and one of the physiotherapist consultants discuss the problems relating to each individual child. The parents prefer this to private meetings; they feel that they learn more from general conferences.

Spalding Enrollment. While much has been said, written, and done regarding the infantile paralysis victims—their hospitalization, education, and cure—there are many other physically handicapped children attending Chicago's special schools. Among these

may be listed the victims of osteomyelitis, tubercular bone, muscular dystrophy, the "congenitals", the cardiacs, and spastics.

Spalding School Enrollment According to Diagnosis (March, 1945):

1.	Cardiacs	483
2.	Spastics	222
3.	Poliomyelitis	148
4.	Tuberculosis	62
5.	Congenital Deformities	34
6.	Medical	27
7.	Osteomyelitis	24
8.	Muscular Dystrophy	21
9.	Congenital Dislocation	18
10.	Spinal Bifida	16
11.	Scoliosis	14
12.	Fractures	12
13.	Amputations	11
14.	Arthritis	10
15.	Slipped Epiphysis	10
16.	Miscellaneous	102
		1,214

The miscellaneous group includes such cases as hydrocephalus, post encephalitis, brachial paralysis, Frederick's ataxia, peripheral neuritis, arthrogryposis, gastro-esophogeal spasm, toticollis, osteochondritis, rickets, flat feet, pituitary dwarf, fragile bones, burns, myasthenia gravis, Volkman's contracture, achondroplasia, amyotrophia congenito, cerebral agenesie, and Erb's palsy.

Bedside Teachers. An outstanding educational arrangement in the city of Chicago is the provision for the child who is hospitalized. These children may be convalescents able to be up and around or they may be bedridden. One of the chief worries of a child in the hospital, and one which at times may be a cause for physical retardation, is his concern regarding school work. To relieve this worry, the Chicago Board of Education has placed regularly assigned elementary and high school teachers in practically every hospital in the city. These teachers at the present time number 31, and the pupils under their care number approximately 500.

Hospital instruction is considered to be an integral part of the special schools; the teachers are members of the special school faculties; and the school work done is done under the direction of the supervisor of bedside teachers. Regular Board of Education supplies and textbooks are used in the hospitals. After determining the status of a child from the school where he has been enrolled, his education continues where he left off on entering the hospital.

Graduation exercises are held in the various hospitals as the young patient finishes his elementary or high school course. Although these are private demonstrations, limited to the hospital,

school nurses, and parents, the graduations are nevertheless very gala affairs.

Clinics. All pupils registered at Spalding are there at the request of medical authority. It is to these same authorities that the children are returned at intervals for consultation and treatment. For the most part, these visits are supervised by the school.

The school buses are always available for taking children to any clinic or doctor. A trained attendant goes with the child or children to the hospitals, accompanied when necessary by a physiotherapist or trained nurse. Usually the parent or guardian meets the patient at the clinic and hears the findings and recommendations given for the physiotherapist.

Public Relations. No reference to the education of the handicapped is complete without giving credit to the co-operating agencies, who contribute so much to the welfare of the children involved. Outstanding among the many groups and organizations are these:

Municipal Tuberculosis Sanitarium nurses
Chicago Board of Health nurses
Willing Helpers Association
(Mothers of elementary school pupils)
High School Mothers' Club
Chicago Heart Association
(Heart Specialist)
Parents of nursery children
(Financial aid to the nursery)
Illinois State Employment Service
(Counseling and Placement)
Illinois Association for Crippled Children
Emmet Sherlock Memorial Club
(Financial aid to high school)
Dorothy Kahn Club
Ruth Lodge
All hospitals and clinics of city
Social Service Agencies
Chicago Club for Crippled Children
Lions Club
Kiwanis Club.

Faculty. Teachers at Spalding School are selected from the same lists as are all regularly assigned teachers in the Chicago Public Schools. Children at Spalding are all educable and, therefore, receive the same academic training given in schools throughout the city.

Special teachers are appointed for the sight-saving, deaf-oral, and slow learning pupils; but these pupils must be physically handicapped as well as in need of the special training to which reference is made, before being enrolled at Spalding. If in need of special instruction in selected classes, pupils who are not physically handicapped attend the regular public schools where special teachers are assigned for their benefit.

The teaching staff constitutes only about half of the staff necessary for the successful conduct of a school of the caliber of Spalding. To this classification are added:

2 Health Department nurses
2 Municipal Tuberculosis Sanitarium nurses
16 Physiotherapists
10 Physiotherapist attendants
21 School attendants
35 Bus attendants
32 Bus drivers
16 Dining room and kitchen attendants.

Nurses. For the care of the cardiacs at Spalding, the Heart Association arranges with the Chicago Health Department to assign two nurses to Spalding. These nurses supervise the recording of pulses and temperatures of all cardiacs before school each morning. They also assign rest periods under the supervision of a heart specialist, who spends one day each week at the school.

The Municipal Tuberculosis Sanitarium also sends two nurses to Spalding. These care for very special tasks necessary for the successful treatment of pupils. One of these nurses is in charge of the ultraviolet room and the other nurse is in charge of surgical dressings and emergencies.

Physiotherapists. The members of the staff of all Chicago's schools for the handicapped are chosen from a special list of those who successfully pass the examinations conducted by the Board of Education. Qualifications for these examinations may be secured by writing to the Board. Salaries of physiotherapists are especially set and graduated for this class of employees only.

Physiotherapy-Attendants. This category covers the members of the clerical staff who carry on all the secretarial work in the office of the treatment center. The young ladies here are all graduates of the Spalding High School commercial course, who, because of their qualifications, have been assigned to their present positions. They are responsible for the physical records of each pupil in the school.

Attendants. The attendants are divided into three classifications.

1. Short-time attendants
2. Full-time attendants
3. Crippled children's attendants.

Class one covers those attendants who ride the buses with the children when going to and from school, but who do not remain at school during the day. Class two covers those who ride the buses and remain on duty in the halls all day. Class three covers those who report for inside duty all day. These attendants care for all

the physical needs (outside of the treatment center) of the pupils in the halls, rooms, toilet rooms, and dining room.

Bus Drivers. These employees are hired by the bus company that services the school by furnishing the 32 buses necessary for the daily transportation of the Spalding pupils. Drivers care for all "carry cases" too heavy to be handled by the attendants, one of whom rides a bus at all times. For this reason drivers are very carefully selected.

Dining Room and Kitchen Staff. These indispensable workers are appointed by the Board and are a very important part of a school for crippled children. Each morning before class work begins, pupils are served hot cocoa, milk and whatever food may be requested. Cod liver oil is also dispensed to those for whom the doctors recommend it at this time. Special diets are served at the diet tables during lunch hour and during the day, according to doctors' orders.

In the dining room for the spastic children, food is served from a special steam cart. All food in the main dining room is served "family style" from steam carts assigned to the various tables. Children receive their meals, as well as everything else at Spalding, gratis. Teachers and other adults, who have a special cafeteria and dining room, pay for their meals.

Since assembling the information contained in this article, the State of Illinois has passed a law which permits the crippled child to attend public school from the age of three years, instead of five, to twenty-one. This in all probability will result in the present privately financed nursery becoming a part of the public school system.

Radiant Disinfection of Air,—A comprehensive program of research on the control of airborne infection by ultraviolet irradiation of classrooms was begun January 3rd by the State Department of Health with the Cato-Meridian and Port Byron Schools, Cayuga County, and the Mexico School, Oswego County, as proving grounds.

The immediate objective is to supplement the school studies conducted in the suburbs of Philadelphia* by determining whether or not this method is effective in reducing the spread of measles, chickenpox, and mumps in large central schools. It is planned to extend the scope of the study eventually to other respiratory infections and by means of devices other than ultraviolet irradiation, such as aerosols. * Wells, W. F., Wells, M. W., and Wilder, T. S., The Environmental Control of Epidemic Contagion. I. An Epidemiologic Study of Radiant Disinfection of Air in Day Schools, *Am. J. Hyg.*, 35:97.

SEX HYGIENE EDUCATION IN JUNIOR HIGH SCHOOL

ELMER L. SEVRINGHAUS, M.D.
Madison, Wisconsin

The past decade has witnessed a rapidly increasing interest in providing adequate sex hygiene instruction for young people in this country. The circumstances associated with the present war have intensified the need and the recognition of this need. Many physicians have wished they might participate in their local communities, in response to requests from teachers and parents for their professional assistance in such educational programs. Often they have not known how to attempt such instruction nor where to turn for aid. During a recent conference with other physicians I was asked to set down in brief form the manner in which I have presented the anatomy and physiology of sex to boys and girls of approximately 13 to 15 years of age in some Wisconsin high schools. Of course, each physician who undertakes such a task will want to organize and analyze his own approach.

This is really a first lesson in the subject which has been given near the conclusion of a semester course in physiology in junior high school in the form of 50-minute lectures to the boys and girls separately.[1] Mrs. Ada Cockefair, the teacher of physiology, who first invited me to give these lectures, has said of their objective: "It is not the imparting of sex information per se, but through the information conveying the concept of the proper place of sex in a well-ordered life. As one student said at the end of the course: "There was something about the way he talked that made it seem very clean and interesting." A physician who has sincere interest in youth is in a position of superior advantage to present this subject, because children accept him as having knowledge and authority above either parents or teachers in matters pertaining to the physical body. This fact does not preclude the responsibility of the teacher, who must in all cases prepare the way by laying a thorough-going foundation in physiological fact."

I think it is important to approach the subject from a level which makes an immediate appeal to the boys and girls in the audience. For that purpose I introduce the discussion by pointing out some phenomena of growth and development which are familiar. In the field of growth there is the irregular rate of gain often spoken of as the adolescent spurt in height, and the fact that the limitation in height is achieved when adolescent development is well under way. These matters are, of course, put in the simplest pos-

sible terms. In speaking to boys, I point out the development of muscles with athletic prowess, of stronger bones, the gradual appearance of the beard, the enlargement of the larynx, which is the basis for the deepening of the pitch of voice, the development of new ambitions and self-respect, and of the growing interest in girls which leads ultimately to a romantic interest and marriage. In speaking to girls, I point out the change in type of skin, the development of the curves of the female adult figure, the growth of the breasts, the new ambitions and interests, the growing desire for the friendship of boys, likewise leading ultimately to romance and marriage.

The next item in the discussion with boys deals with inguinal hernia, the mechanism involved being an unusually roomy inguinal canal, and from that to the contents of the inguinal canal and their importance. This leads naturally to the testicle and then to the dual responsibility for the preparation of an internal secretion or hormone and an external secretion or semen. The hormone responsibility for the developmental features already enumerated is then easily presented. Turning to the external secretion, the path of the spermatazoa is traced up from the testicle through the epididymus into the body proper and ultimately to the urethra and the obvious function of insemination is mentioned. In pointing out the ampulla on the ductus deferens the function of temporary storage is mentioned. The seminal vesicle is explained as providing a secretion containing glucose for the temporary nutrition of the active sperm cells. The prostate provides further secretion and also acts like a three-way valve controlling fluid passage from the urinary bladder, from the seminal apparatus or allowing neither to occur. It is then explained that when the ampulla and seminal vesicles become over-full, spontaneous release of these secretions by opening of the prostatic passage occurs during the period of maximum relaxation or sleep. Sensory impulses from such an occasion lead frequently to the brain phenomenon, which is ordinarily called a dream, and because of the emission this is spoken of as a wet dream. The proper term of nocturnal emission is also given and the frequency as between two weeks and two months interval mentioned.

Turning to the function of the penis again, it is pointed out that for insemination to occur, erection is necessary and the congestive mechanism for erection is briefly explained. It is then pointed out that this erection may also be brought about by the pressure of a full bladder on the nerves involved, and that this ex-

plains the frequently observed erection on awakening from sleep. This phenomenon has no direct sex significance, but is a source of worry to many young men.

Masturbation has often been advocated as a necessary exercise to develop organs. The folly of this is pointed out and the endocrine control on the development of genitalia and testicular functions by the anterior pituitary is explained. Masturbation does not cause feeble-mindedness nor insanity, but it is an unpleasant habit, and young and older men with good intelligence who understand the sex organs and their functions shun this habit.

In the approach to the problems of girls, the ovaries are pointed out, and their dual responsibility for making internal secretions and for liberating ova explained. The responsibility of the internal secretion for the development of all of the physical and psychological characters mentioned in the introduction is then easily understood. The process of ovulation is described briefly with the migration of the ova through the Fallopian tubes to the uterine cavity. Imbedding of the fertilized ovum occurs if proper preparation of the uterus has preceded the arrival of the fertilized egg. An unfertilized ovum disappears.

The urgent need for a hospitable uterine mucosa is explained by the analogy to the preparation of a garden seed bed. Preparations must be made just before the seed is planted. The agents for the preparation of the uterine mucosa are the two hormones of the uterus (estrogenic and progesterone). After this preparation has occurred if the fertilized egg does not become imbedded, the mucosa is shed together with a considerable amount of blood loss in the secretion, and this is called menstruation. It is therefore, understandable that the material lost in a menstrual flow is not impure, harmful, dangerous; but that this is merely highly specialized food material and equipment for the reception of a fertilized egg. It is then urged that girls should keep records of the duration and interval of menstruation because of the importance of knowing whether this function is recurring regularly. The irregularity of menses is explained as due to any one of several disorders, but not a cause of disease per se.

Dysmenorrhea is mentioned and treated as probably occurring in less than a majority of girls and also as a phenomenon which should lead a girl to consult her physician. In the hygiene of menstruation, girls are advised to continue with moderate activity unless there is disabling pain, to avoid being chilled, to make no change in habits of bathing, not to use douches unless on medical

advice. If the question of tampons versus external napkins is brought up in discussion as often occurs, tampons are advised against for younger girls unless on doctors orders.

Venereal diseases are not discussed as such, but both boys and girls are instructed to report any irritation or discharge from the sex organs to their regular physicians.

In conclusion, it is pointed out to both boys and girls that the sex organs are very important equipment for the development and maintenance of personality, and of course for the reproduction of the species. Therefore, the individual has a responsibility to understand these organs in order that he may give intelligent care, to guard them throughout life and to plan to make us of them only wisely, which the experience of the human race has shown to be within the bonds of married life.

In presenting these topics, it is considered very much easier to use diagrams of the pelvic organs of both sexes which are essentially sagittal sections[2]. In addition, a photograph of a plate of the front view of the male body with the muscle layers and the inguinal structures is helpful in discussing hernia for boys, and sagittal sections of the abdomen in the very early pregnancy and term pregnancy are helpful in talking with both sexes about the reproductive responsibilities[3]. It should be mentioned that a very brief summary of the female anatomy and physiology is presented to the boys, to whom menstruation is very briefly explained and to whom the appeal is made on the basis of chivalry that a girl friend is never asked "why" if she decides to change her plans for any kind of a proposed activity. Similarly, male anatomy is explained briefly to the girls, so that they may recognize the differentiation of structure and function. This type of presentation has been used in two different large high schools and in summer camp groups of boys and girls of the same age. When time permits a number of questions are usually raised by the boys and girls and answered at once; otherwise they are discussed by the regular physiology teacher at the next meeting of class.

Obviously much further instruction is necessary. A succeeding unit of time should be devoted to the venereal disease problems[4]. With modern social standards this cannot safely be postponed beyond age 15. During the years of senior high school, youth should be furnished skillful guidance in developing their standards of conduct in group affairs, in dating, and in selection of friends, ultimately of their mates. Physicians may properly be asked to consult with parents and teachers about the content of such a pro-

gram. Often physicians may contribute to the actual group contacts with youth in such matters in a more acceptable manner than most other citizens. At once it becomes evident that an urgent need is for more teachers of physiology, better trained and selected from among mature people with wholesome attitudes toward life.

Parents are recognizing not only the need for such systematized instruction, but the parental responsibility for providing it. Since so many parents are unable to carry on an accurate or adequate program, the Wisconsin Congress of Parents and Teachers is fostering study courses in this field. The printed material used as a base is a series of booklets developed by Dr. Roy Dickerson of the Cincinnati Council of Social Hygiene, and used similarly by him in his community.

(1) Further aids for use at this age include:
"Attaining Manhood" and "Attaining Womanhood," by G. W. Corner, 1938, Harper & Bros., New York.
"Understanding Ourselves," by Marian L. Faegre, 1943, Minnesota Dept. of Health, Minneapolis.

(2) Satisfactory diagrams may be secured from
The American Social Hygiene Assn., 1790 Broadway, New York City. It is helpful to have these reproduced on lantern slides for use with class-room groups.

(3) These may be secured from standard anatomic atlas or text books, and likewise reproduced in lantern slides.

(4) "So Youth May Know," by R. E. Dickerson, Association Press, New York, 1944, is very helpful.

* * * * *

Diphtheria,—Several years ago, a study Dr. Godfrey made—he found that if a certain proportion of the children in any community were immunized (something less than 50 per cent, all told) they wouldn't have outbreaks of diphtheria. They might have individual cases, but these immunes in between—it didn't spread.

The way the cases have dropped off—well, thirty years ago we had fifty-five *hundred* cases, upstate, in a year; last year we had fifty-six cases. But we've had more so far this year than we had all of last year. And that's started 'em doing some more figuring.

In the early years, when diphtheria was common, a considerable number of youngsters, mostly in the larger places—they picked up a few germs; not enough so't they came down with the disease, but it stimulated what they called "natural" immunity. Today, with so few cases, that factor's largely eliminated. The result is that we need to have a larger proportion of the children artificially immunized. Another thing: the youngster that has toxoid in his first year needs another dose before he starts school—like recharging the automobile battery. Paul B. Brooks, M.D. ("Doctor Jones" Says) Health News, October 15, 1945.

EVALUATION OF THE TUBERCULIN TEST

By DR. GEORGE H. VERNON

Enthusiasm for mass X-ray surveys has led to a tendency in some quarters to minimize the importance of the tuberculin test. Many tuberculosis workers who are familiar with the advantages of tuberculin testing are fearful that it will be pushed too far into the background. There is much to be said for both methods of examination and many intangible factors are involved. The information derived from tuberculin testing is limited to one disease. Chest films may disclose a variety of pulmonary abnormalities as well as changes in the cardiovascular system. For this reason X-ray surveys tie in with other public health programs, such as those dealing with heart disease and cancer. It is hoped that this paper will stimulate discussion, and crystallize opinion, on the relative value of these procedures in a well-balanced tuberculosis control program.

Ultimate success in the eradication of tuberculosis depends on the discovery of as many cases as possible in the minimal stage. At this time the patient has had little or no opportunity for the infection of even close contacts. Isolation and proper treatment lead to satisfactory arrest of the disease with a minimum of permanent disability in most instances. It should be kept in mind that there are only two conclusive indicators of the presence of tuberculosis infection, a positive tuberculin reaction and secretions containing tubercle bacilli. The tuberculin reaction is so much the more sensitive of these two indicators that it shows the presence of tuberculous infection in the absence of clinical disease. All the other signs and symptoms of tuberculosis may be caused by a variety of other conditions and all such evidence is circumstantial until confirmed by one or both of the conclusive tests.

X-ray findings may precede a positive tuberculin reaction in primary tuberculous infection, but films are seldom obtained at this time. For practical purposes it is possible to detect the presence of tuberculous infection more accurately and earlier by tuberculin testing than by any other means. Opinions vary on the significance of primary tuberculous infection. However, all agree that it precedes the serious reinfection type of disease. By tuberculin testing we can set aside the members of a given group who may develop active tuberculosis. Important use can be made of this information. The value of the positive tuberculin reaction begins in the individual case as soon as redness and swelling start around the site

of injection. The patient who has had this proof that tubercle bacilli have entered his body is usually concerned and ready to listen to advice and suggestions. If further investigation indicates the presence of active disease the patient is isolated and treated. Constructive preventive measures can be encouraged in the remainder of the group who are clinically well. These people are told that the chance of developing serious disease is small. Such disease will be more likely to occur in those who have further contact with cases of active tuberculosis and in those whose habits of living are unwise. The patient becomes aware of the fact that it is to his own self interest to detect active cases among his associates. He may be more cooperative in encouraging the examination of family contacts. Advice given at this time, especially to young people, in regard to the importance of adequate hours of sleep, proper diet, and of examinations following severe respiratory infections and childbirth, may make a lasting impression. It gives the patient a feeling that there is something that he can do to avoid becoming ill later. It is further explained that tuberculosis can usually be detected on chest films for months before any symptoms are present. X-ray examination once a year will make it reasonably sure that if disease does occur it will be discovered early. In brief, the individual is told that if he takes care of himself and uses his head he can reduce his chances of having tuberculosis practically to zero. If we feel that such advice is wasted we are underestimating the intelligence of our people. In this way it is possible to make tuberculin programs a real force for the prevention of tuberculosis as well as an aid in case findings and early diagnosis.

Years of experience with tuberculin testing of high school groups have demonstrated that it has a definite educational value among the students and the members of their families. The number of active cases found is small, but it is particularly worthwhile to uncover minimal disease at this age. Of greater importance, however, is the information given as to which individuals require annual chest films. The positive tuberculin reactors in a high school survey can be expected to yield a significant percentage of active cases in a period of ten to fifteen years following graduation. This knowledge of which young people are most likely to develop active disease can be obtained in no other way. The family contacts should be examined despite the fact that the high school group have many other opportunities for infection.

There is much to be said for tuberculin surveys in the preschool or first grade classes. The percentage of positive reactors is low and active disease is rarely found. Examination of the family

contacts, however, shows a high percentage of clinical tuberculosis, because the source of infection is almost always in the home.

As miniature chest films become more satisfactory and inexpensive, we hear the need for tuberculin testing questioned more frequently. Why bother with a procedure which requires seeing each patient twice and still end up by making a film? It is quicker and more economical to have films on everybody in the beginning. This line of reasoning is valid provided all such individuals can be checked annually with additional films. If this is done, the suspicious cases can have further study each year, and the infected group with normal X-ray findings, will get their annual re-check automatically. In practice, however, one finds that the patient who has had a positive tuberculin reaction is more likely to cooperate in having films repeated over a period of years.

Even the most ardent X-ray enthusiasts must recognize the need for tuberculin testing as part of the study to be given to every case showing questionable film findings. Many other conditions may cause X-ray shadows which are similar to those of tuberculosis. Neither procedure gives more than a start in the evaluation of a given case. A positive tuberculin reaction indicates the need for further study by X-ray and possibly by other means. A questionable chest film calls for further clinical examination, including a tuberculin test. Many patients whose films would suggest the need for routine follow-up, prove to have negative tuberculin reactions. This was very well shown when approximately 25 per cent of selective service rejectees, who were disqualified on film findings, were tuberculin negative. These, we believe to have had complete healing for a sufficient period to have lost their sensitivity to tuberculin, and to have had no recent tuberculous contact.

From what has been said it is obvious that both tuberculin testing, and X-ray examination of the chest, are of value in tuberculosis control, Which should be stressed, and which used first, may vary under different conditions. In an area largely agricultural and residential, with numerous small towns, and no large industries, tuberculin testing is more feasible. The percentage of positive reactors is relatively low and the number of films required is materially reduced. Where funds are limited, which in itself shows the need for education, tuberculin testing exerts its recognized educational influence.

As in high school surveys, some cases are discovered, people are found to keep under observation, and the groundwork is laid for other programs. If case finding is the primary objective, it may be

advisable to test the children of the pre-school age, and examine the family contacts of the positive reactors. More active cases will be discovered in this way, and again, a group will be established for periodic re-examination. In densely populated areas. X-ray surveys have a more obvious place. The infection rate is higher, and, particularly in industries, it may be possible to arrange for film studies, where the more time consuming tuberculin procedure would not be acceptable. Routine chest films of all hospital admissions are desirable and for many reasons are more feasible and satisfactory than primary tuberculin testing. In general office practice the tuberculin test becomes the procedure of choice. Films are available without cost to the positive reactors in most communities.

It is worth repeating that no final conclusion as to the presence of active disease can be reached by either of these methods of examination. The information so obtained must be correlated with the history and other clinical findings, especially the results of sputum examination. It is possible to demonstrate the presence of tubercle bacilli, by a careful search, including guinea pig inoculation or culture of fasting gastric specimens, in an overwhelming majority of active cases.

In Conclusion: Tuberculin testing is of great value in preschool and high school surveys and as a routine office procedure in general medical practice. X-ray surveys are of equal importance for industrial groups and hospital admissions. Neither is, in itself, sufficient evidence upon which to base a diagnosis of active pulmonary tuberculosis. Tuberculin surveys should not be abandoned until all people have annual chest films, and even then they will retain a great value in the prevention of tuberculosis. ITAM, Illinois Tuberculosis Assn., May 1945. p. 34.

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Health Education Council,—The establishment of a Kansas Health Education Council was recommended recently, to be composed of twenty members, with Governor Andrew F. Schoeppel to serve as honorary chairman and with certain executive officers of the state board of health to serve as ex-officio members. The recommendation was the result of a school health study, which has been under way for the past year, under the direction of Clair E. Turner, Dr. P.H. (The Journal, March 24, p. 723). In addition to the Council it was recommended that an advisory committee be formed, the committee to consist of one member representing each of the fifty-three statewide organizations that have participated in the study. The Journal of the American Medical Assn., July 21, 1945. (Vol. 128, No. 12.)

MENTAL HYGIENE GUIDE-POSTS*

FREDERICK L. PATRY
Albany, N. Y.

The readers of TALK are fortunate in having as their Editor a physician who is imbued with mental hygiene knowledge and expert ability in imparting it. By way of sharing with him this common property and desideratum, I am offering the following "guide-posts." It should be kept in mind, however, that there is no rule-of-thumb or panacea in correcting or preventing mental and emotional difficulties. Individual differences demand a tailor-cut prescription to meet each unique set of facts involving the personal equation.

1. Since mind, body and spirit are inextricably knit together, and the individual is always functioning as a total unit, prime attention must be given to the *physical basis* of personality. A periodic examination by your physician and dentist is a sound investment.

2. Of essential importance is the prevention of abnormal or excessive *fatigue*. Uncorrected, this may lower total personality functioning causing not only a lowered resistance to infections, but also depression of mood with its unfortunate train of symptoms.

3. Keep your *emotional life* on an even keel. Avoid excesses of all kinds, especially excitements. Refuse to listen to or encourage rumor-mongers.

4. Get into *work* that gives you a feeling of worthwhileness, which is a valuable asset in peace or war.

5. *Face facts* and conditions frankly and squarely. Seek enlightenment in reading material, radio, lectures and discussions. Cultivate an analytical frame of mind and a workable philosophy of life in meeting the here and now.

6. Notwithstanding human achievements of intelligence, critical thinking, and ethical suasion, we are essential beings who live by **habit.** Of fundamental importance, therefore, is healthy habit-formation. This respects not only biological functionings such as work, play, rest, sleep, diet and elimination, but also emotional and mental habits which aid in successfully meeting duties, responsibilities and opportunities.

7. When in doubt and perplexity, seek the counsel of your best friends and advisors.

8. Make a sincere effort to know yourself better. Accept yourself at face value, liabilities as well as assets. Make an effort

to be your better self, believing in the improvability of human nature and the worthwhileness of effort in valid purposes and goals.

9. These are troublesome and profoundly disturbing times. Human history and realism should cause you to *expect* trouble and fear. These do not of themselves imply danger. *Fear, anxiety and worry have no other weapons than those you unwisely furnish.* As far as possible continue in your normal activities. And remember that a wholesome sense of humor is invaluable in cushioning the bumps of life.

10. Marshal all the spiritual forces available and help each person to use to the full this ofttimes supreme instrument of strength. Ascertain what one believes in — everyone has a conscious or unconscious repository of spiritual values and strength—and through your good example and influence help each to use what he has and to grow in a belief which helps in meeting more successfully one's daily tasks. *Reprinted from the August, 1944 issue of *"Talk,"* published monthly by The National Hospital for Speech Disorders, 61-63 Irving Place, New York 3, N. Y.

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Ringworm of the Scalp,—In the present rather widespread epidemic of tinea capitis the offending organism in most cases is Microsporum audouini. Infections caused by this organism are extremely resistant to treatment. The average case may last for eight or nine months. The most rapid and successful method of treatment is epilation of the diseased hair by means of the X-rays. This, however, is a most delicate operation and should be done only by some person experienced in this type of treatment. The machine should be accurately standardized and the quantity of X-rays necessary to produce a temporary alopecia definitely known; for further details of this treatment one should consult George M. MacKee's X-ray and Radium Treatment of Diseases of the Skin (ed. 3, Philadelphia, Lea & Febiger, 1938, chapter 28.)

Treatment with topical applications is slow, but if the hair is clipped short an ointment containing 10 per cent iodine crystals in aquaphor can be used twice daily. This should be applied with a soft toothbrush morning and night, and as soon as a reaction occurs and the scalp becomes tender, treatment should be suspended for a few days and then resumed. Another ointment of value is composed of precipitated sulfur, 6 Gm., salicylic acid 3 Gm., castor oil 6 cc. and petrolatum to make 60 Gm. Still another is ammoniated mercury 3 Gm., salicylic acid 2 Gm., petrolatum 30 Gm. and hydrous wool fat to make 60 Gm. Journal of American Med. Ass'n., June 30, 1945, p. 697.

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EDITORIAL

A number of years ago this writer heard one of the leading public school superintendents say that in our public schools the only child who received adequate health protection and education to develop his mental and physical potentialities to the highest level was the child who was seriously mentally or physically handicapped.

If the school district in which he lives is even moderately modern, such a child is put in a special class or a special school. There he is protected, treated, developed, and educated. To such classes are assigned physicians especially equipped to give guidance and to advise the treatment best fitted to develop the health, growth and welfare of these handicapped children. The nurses detailed there are selected with special care. The teachers in charge of instruction are especially fitted by personality, love of the unfortunate, and by special training to give these pupils the best type of education that modern science can devise. The personnel in charge of treatments—when treatments are a part of the program—are most carefully selected. Attendants are chosen for their peculiar aptitudes for service to special groups, for their ethical standards and for their love of children.

In some types of these classes, the children are given adequate amounts of scientifically chosen, carefully prepared food to carry them through the day, and to build up their nutritional condition to such a level that physical and educational progress may be possible. Satisfactory physical growth, mental attainment, and skill acquirements, rest basically, to be sure, on heredity, but even a good engine does not perform efficiently on poor quality or scanty fuel.

How much similar staffing and equal care and expertness given to all children would advance this country in a single generation, it is impossible to estimate. If the billions of dollars being wasted on inefficient and obstructing bureaucracy could be diverted—without creating more bureaucracy—to the better care, growth, development, and true education of our children, we would indeed be fortunate.

The leading article in this issue of the *Journal* describes the plan, function, and accomplishment of such a school. The principal, teachers, doctors, nurses, technicians and attendants are rendering a great service to Chicago, and setting a high standard of excellence for other communities to imitate.

"Whosoever saveth a child from the fingers of evil sits with the builders of cities and the procurers of peace."—*C. H. K.*

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ABSTRACTS AND NOTES

Control of Air-Borne Infection,—Statistics for the years 1933-1943 have shown a steadily mounting rate of absenteeism in industry due to respiratory diseases.

The Wellses demonstrated that transmission of infection through the air may be due to droplet infection proper or to the dried residue of infected droplets which may be suspended for a long time and carried long distances.

The enclosed or living spaces present the principal source for the dissemination of respiratory diseases. The means for the reduction of the bacterial content of living spaces at present include ultra-violet irradiation, dust suppressive measures and the use of germicidal vapors. English investigators have demonstrated that oiling floors and bedclothes was capable of reducing air-borne bacteria in a hospital ward by 90%. The use of oil on bedclothes brought about a striking reduction in the aerial dispersion of bacteria which ordinarily occurs during bed-making. Oiled bedding plus oiled floors effected a further reduction of about 90% of the bacterial counts in the control barracks. In the wards of a children's convalescent home, where propylene glycol vapors were used, the incidence of upper respiratory infection was much lower than in control barracks.

The bacteriologic studies have established the fact that air is an important source of contamination in every operative wound. Sterilization of the air in an operating room can be accomplished by ultra violet irradiation.

Ultra-violet irradiation of the floors and upper air of barracks housing naval recruits was accompanied by a 25% reduction of

respiratory illness, as compared with illness in the adjacent barracks. An increased body of evidence indicates that the amount of air-borne infection is greater than was formerly believed. The methods thus far developed for the reduction of the bacterial content of living spaces constitute an important contribution to the total problem of control of respiratory diseases. Their practical application presents a number of problems, the solution of which will call for the cooperation of such specialists as physicians, engineers, architects and manufacturers of special apparatus. Editorial, Journ. A. M. A., October 20, 1945. Abstracted by Wm. E. Ayling, M.D., Syracuse, N. Y.

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Ventilation in the Spread of Chicken-Pox and Measles Within the School Rooms,—Enlightened opinion, which formerly opposed on hygienic grounds, lowering the volume of air change, now recognizes the potentiality of higher standards of sanitary ventilation through air disinfection, which can practicably provide the hygienic equivalent of ventilation impossible of attainment by actual air replacement.

Studies were undertaken to test the hypothesis that the spread of air-borne infection in school rooms could be controlled by radiant disinfection of air. In the lower grades of schools, where the pupils are more susceptible to such diseases as chicken-pox and measles, explosive outbreaks are apt to occur. If these diseases are air-borne, as is now generally conceded, our present standards for the ventilation of school rooms, which provide air change on a basis of total pupils, are insufficient in the lower grades. Measles, for instance, tends to assume an epidemic character in individual school classes when the proportion of susceptibles reaches 30 to 40 per cent and continues to spread until the proportion falls below 15 to 20 per cent.

In the Philadelphia schools studies were made to determine the outcome of exposures to chicken-pox, measles and mumps in class-rooms irradiated by special fixtures providing ultra-violet light as compared to similar age groups in unirradiated class-rooms. The children were carefully checked as to their susceptibility to these diseases, i.e., whether they had already had these diseases, and only the susceptibles were included.

The outcome of the study in the irradiated class-rooms was that the ultra-violet lights increased, in all susceptibility groups and in all three diseases, the chance that an exposure would be negative and that the chain of infection would be broken.

In the unirradiated class-rooms the chance that an exposure will cause other cases was found to increase with surprising regularity.

Comparison of the percent of negative exposures in the irradiated and unirradiated class-rooms, showed the difference to be greater in classes of high susceptibility, presumably because in classes of lower susceptibilities sanitary ventilation is ordinarily sufficient to prevent the spread of infection. It was found that high relative humidity of the air, more than 60 per cent, made the ultraviolet rays relatively impotent against micro-organisms suspended in the air.

Dr. Wells states in summary, first, that the school ventilation standard of 30 cubic feet of air per minute, per child, is both difficult to attain and inadequate to prevent class-room spread of chicken-pox and measles, except in relatively immune classes.

Second, that radiant disinfection of air can be substituted for actual air replacement. In the experiments reported, the ultraviolet lights increased, in all susceptibility groups and in the three diseases tested—chicken-pox, measles and mumps—the chance that an exposure would not produce other cases. Ventilation In The Spread of Chicken-Pox and Measles Within the School Rooms, by Mildred Weeks Wells, M.D., The Journ. of the A. M. A., September 15, 1945. Abstracted by William E. Ayling, M.D., Syracuse, N. Y.

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Water Drinking During Strenuous Exertion,—To the Editor: In strenuous athletic contests, particularly basketball, coaches insist that the players should not drink water. What is the effect of drinking water, if any, on the players' efficiency? If detrimental, what is the physiologic explanation?

Answer:—This edict by the athletic coaches has some physiologic basis, but as stated it is too absolute since it ignores the quantity of water that may be imbibed. These are the facts:

1. The great nervous tension in the athlete for a period preceding the contest and the great physical exertion during the contest, induce profuse sweating and consequent thirst. These conditions also disturb the normal motility of the stomach. There is decreased gastric motility, at times also increased tonus of the pylorus. A large quantity of water (300 to 800 cc.) taken under these conditions will stay longer in the stomach, and through pressure caused by the tension of the abdominal muscles may impair the movements of the diaphragm and the heart.

2. There are reports that such large quantities of water (500 to 1,000 cc.) by mouth, followed at once by extreme and prolonged physical exertion, may induce temporary oliguria or anuria, body hydration and some of the symptoms of water intoxication (Hildebrandt and others, Am. J. Physiol.: 116 168, 1936). There is other evidence of more severe renal injury from extreme and prolonged physical exertion, especially in persons not trained for such contests.

3. The edict of the athletic coach that even a mouthful of water, permitted to moisten the mouth just before or during athletic contests, must not be swallowed is not based on reliable evidence; negligible damage to or impairment of the individual from such small quantities of water is to be expected. Such a ruling is a tradition; perhaps it is easier to enforce or observe total prohibition than strict moderation. "The Journal American Medical Assn." March 31, 1945.

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Reading Disability a Pediataric Problem,—Wolf (T. H.) shows that disability in reading may play a part in the physical complaints and emotional tensions found in school children, particularly in those nine to ten years of age or older. From the fourth, fifth and sixth grades on, the ability to read assumes an increasingly important part in nearly every school subject. A youngster unable to compete with his classmates because he cannot read, finds himself at a disadvantage, and repeated failure results in unhappiness for which he may try to compensate in various ways. He may develop into a behavior problem, becoming sullen and negativistic toward his teacher and classmates. He may become the bully or withdraw from contacts with the group. On the other hand, he may develop bizarre physical complaints varying from mild headaches to severe digestive disturbances, fainting spells or convulsive seizures. A case recently encountered in the pediatric outpatient department of the University of Minnesota Hospitals illustrates the point. A frequent error of parents and teachers is to think of the child as dull and stupid. Measured intelligence and rapid school progress after remedial treatment have proved otherwise. Uncorrected conditions of the eye or ear may be responsible for the reading difficulties. The physician should look for muscular imbalance, which may cause a lack of fusion of visual images. Islands of deafness may be unrecognized. Other factors that play a part in reading disability are inadequate instruction, emotional problems and cerebral factors. The theories of causation due to left-handedness, to mixed eye-hand dominance in the cerebral hemispheres, have been open to serious question and criticism. Most, if not all of the difficulties can be relieved by proper guidance. The Journal of the American Medical Assn., August 4, 1945. Vol. 128. No. 14.

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Ringworm of the Scalp,—Dr. Roland R. Cross, director of the state department of public health, has announced that effective July 10th, all cases of ringworm of the scalp occurring in Illinois must be reported to the official public health authority having local jurisdiction. Children infected with the disease shall be excluded

from schools, theaters and public places until all lesions have healed. Placarding of homes and complete isolation will not be required, but disinfection of all towels, washcloths and head coverings of all articles used by patients will be enforced. All persons under 15 years of age that have been in contact with the patients should be inspected for evidence of the infection. The Journal of the American Medical Ass'n., July 28, 1945. Vol. 128, No. 13.

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Ringworm of the Scalp,—which has presented a serious problem for health authorities in many parts of the nation, especially in larger cities, has been successfully treated without the use of X-rays by dermatologists of the Industrial Hygiene Division, U. S. Public Health Service, in a test area. In Hagerstown, Md., the epidemic which affected between 10 and 15 per cent of the school population of 4,500, has been controlled. Methods used included examination of all school children by means of the Woods light, and referral of infected pre-school children in the family of infected parents. Instead of being quarantined at home, infected boys and girls were permitted to attend school, but were required to wear protective caps and were not admitted to movies, playgrounds, swimming pools or any other public places. Infection was further controlled through enforcement of rigid sterilization provisions in barber shops and through an educational campaign designed to acquaint parents with the mode of transmission of the infecting agent. Journal Am. Med. Assn., March 31, 1945.

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Ringworm of the Scalp,—Hundreds of school children have been infected by ringworm of the scalp, in what is reported to be one of the severest epidemics in the history of this country, according to the *Illinois Health Messenger.*

This highly infectious disease is produced by a fungus type of organism which spreads outward from the first point of infection and travels upward along the hair shafts. The infected hair often appears to be nibbled off. In the beginning, these areas are about one-fourth of an inch in diameter, but may gradually enlarge and fuse to such an extent as to involve practically the entire scalp. As a rule, however, the disorder is limited to from three to a dozen small coin-sized patches, wholly or partly covered with white, grey or yellowish scales. There is usually no redness, and itching in various degrees of severity may be present.

Ringworm of the scalp spreads rapidly by direct contact, or through the use of an infected comb, brush, hat or similar article. Certain types of the infection may also be spread by dogs, cats and

other pets. Once identified, the disease requires intensive and continued treatment to overcome.

Some excellent recommendations regarding the control of epidemics of ringworm of the scalp have been made by the Illinois Department of Public Health. They are as follows:

(1) All school children should receive a careful examination of the scalp. The use of filtered ultra-violet rays (Wood's light), simplifies the examination and increases its accuracy.

(2) Patients with ringworm should be excluded from school, unless special precautionary measures are applied.

(3) Children under treatment should wear a linen skull cap at all times. These caps should be changed at least once a day and boiled for ten minutes after each use.

(4) Barber shops should be informed that infected combs and brushes will spread the infection, and such articles should be washed with soap and water after each use.

(5) Parents should be instructed to wash the child's scalp immediately after each haircut. Ointments prescribed by a physician may be used before the shampoo to provide additional protection.

(6) Pets, particularly kittens, should be inspected under filtered ultra-violet rays, as they may be carriers of ringworm.

(7) Adequate facilities for proper treatment should be provided for each case discovered. From "School Management," September 1945, pp. 22.

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Tuberculosis,—Dillon and his associates review the results of the tuberculin testing of 51,818 high school students and of the X-ray examination of positive reactors by the Division of Tuberculosis Control of the Tennessee Department of Public Health. Of these students, 7,525, or 14.5 per cent, reacted 0.01 mg. of old tuberculin, and 371, or 0.7 per cent, were found to have significant lesions. The percentage of white students reacting was 13.3, and of colored students 28.4, more than double that of the white. The percentage of students with significant lesions was 0.6 for white and 2.2 for colored. Of the 371 students with significant lesions, 369 had lesions of the reinfection type, 189 of which were definite and 180 suggestive. One hundred and forty-eight, or 77.5 per cent, of the 191 definite lesions were minimal in extent, 41 were moderately advanced and only 2 were far advanced. Of 5,848 white students who reacted to tuberculin and received an X-ray examination, 2,357, or 40.3 per cent, were found to have calcified lesions in the lungs, including those with significant lesions, who also showed evidence of calcification. Journal of American Med. Assn., June 16, 1945.

Diphtheria,—In 1943 the death rate from diphtheria at all ages fell below 1 per hundred thousand for the first time.[1] At the same time the death rate in children under 10, in whom the disease is most frequent, has fallen below 5 per hundred thousand. Wide variation in the size of the diphtheria rates among children occurs, however, in different states: using the average figures for 1940-1942, Delaware without any deaths from diphtheria under 10 during these three years appeared at one extreme, and, at the other, Arkansas and South Carolina with 13.7 deaths per hundred thousand, and Oklahoma with a rate of 13.5. The available methods for control of diphtheria are sufficient to allow the complete elimination of this disease in the United States. An analysis of fatalities among children insured in a large life insurance company indicated that two factors were principally involved; delay in treatment (when the physician was not called until the fourth day of the disease or later), and the use of insufficient anti-toxin. The application of modern immunization methods of susceptible persons on a countrywide basis would serve to eradicate the disease; meanwhile, emphasis on the importance of sufficiently early administration of antitoxin in adequate doses would help to prevent the unnecessary deaths of some 1,000 American children who still die of diphtheria annually. The Journal of the American Medical Assn. Nov. 3, 1945, page 679.

Colds in Industry,—Colds are responsible for more than one-third of the total number of days lost in American industry. They cause a loss of 100 million working days each year. There is a definite pattern to the incidence of colds, with the highest peak in December (or December-January) and a lesser peak in October. July is the month of the lowest incidence of colds. Sudden drops in temperature are followed by rises in the incidence and in the severity of colds. Both incidence and severity are much greater among office workers than among factory workers and greater among women than among men. A majority of the colds in women appeared at the time of the menstrual period. There is decreasing incidence of colds with increasing age. The severity of colds increases with age. There are fewer colds in air conditioned plants. The incidence of colds is highest in drafty places. More colds start on Monday than on any other day of the week. This is especially true of colds among men. Posture is an important factor in that the incidence and the severity of colds are lowest among those whose work necessitates walking about most of the time. Early therapy seems to be of greatest value. Archives of Otolaryngology, Chicago, June, 1945, as Abstracted in The Journal of the American Medical Assn., September 8, 1945, p. 167.

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